

WHAT IS CLAIMED:

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1. An isolated fragment of a hypersensitive response elicitor protein or polypeptide, wherein said fragment does not elicit a hypersensitive response but has other activity in plants.

2. An isolated fragment according to claim 1, wherein the hypersensitive response elicitor protein or polypeptide is derived from an *Erwinia Pseudomonas*, *Xanthomonas*, or *Phytophthora*.

3. An isolated fragment according to claim 2, wherein the hypersensitive response elicitor protein or polypeptide is derived from *Erwinia amylovora*.

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4. An isolated fragment according to claim 3, wherein the fragment is selected from the group consisting of a C-terminal fragment of the amino acid sequence of SEQ. ID. No. 23, an N-terminal fragment of the amino acid sequence of SEQ. ID. No. 23, and an internal fragment of the amino acid sequence of SEQ. ID. No. 23.

5. An isolated fragment according to claim 4, wherein the fragment is a C-terminal fragment of the amino acid sequence of SEQ. ID. No. 23 spanning the following amino acids of SEQ. ID. No. 23: 169 and 403, 210 and 403, 267 and 403, or 343 and 403.

6. An isolated fragment according to claim 4, wherein the fragment is an N-terminal fragment of the amino acid sequence of SEQ. ID. No. 23,

7. An isolated fragment according to claim 4, wherein the fragment is an internal fragment of the amino acid sequence of SEQ. ID. No. 23 spanning the following amino acids of SEQ. ID. No. 23: 105 and 179, 137 and 166, 121 and 150, or 137 and 156.

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8. An isolated fragment according to claim 2, wherein the hypersensitive response elicitor is derived from *Pseudomonas syringae*.
9. An isolated fragment according to claim 8, wherein the fragment contains amino acids 190 to 294 of SEQ. ID. No. 31.
10. An isolated DNA molecule encoding a fragment according to claim 1.
11. An isolated DNA molecule according to claim 10, wherein the hypersensitive response elicitor protein or polypeptide is derived from an *Erwinia Pseudomonas*, *Xanthomonas*, or *Phytophthora*.
12. An isolated DNA molecule according to claim 11, wherein the hypersensitive response elicitor protein or polypeptide is derived from *Erwinia amylovora*.
13. An isolated DNA molecule according to claim 12, wherein the fragment is selected from the group consisting of a C-terminal fragment of the amino acid sequence of SEQ. ID. No. 23, an N-terminal fragment of the amino acid sequence of SEQ. ID. No. 23, and an internal fragment of the amino acid sequence of SEQ. ID. No. 23.
14. An isolated DNA molecule according to claim 12, wherein the fragment is a C-terminal fragment of the amino acid sequence of SEQ. ID. No. 23 spanning the following amino acids of SEQ. ID. No. 23: 169 and 403, 210 and 403, 267 and 403, or 343 and 403.
15. An isolated DNA molecule according to claim 12, wherein the fragment is an N-terminal fragment of the amino acid sequence of SEQ. ID. No. 23.

16. An isolated DNA molecule according to claim 12, wherein the fragment is an internal fragment of the amino acid sequence of SEQ. ID. No. 23 spanning the following amino acids of SEQ. ID. No. 23: 105 and 179, 137 and 166, 121 and 150, or 137 and 156.

17. An isolated DNA molecule according to claim 11, wherein the hypersensitive response elicitor is derived from *Pseudomonas syringae*.

18. An isolated DNA molecule according to claim 18, wherein the fragment contains amino acids 190 to 294 of SEQ. ID. No. 31.

19. An expression system transformed with a DNA molecule according to claim 10.

20. An expression system according to claim 19, wherein said DNA molecule is in proper sense orientation and correct reading frame.

21. A host cell transformed with a DNA molecule according to claim 10.

22. A host cell according to claim 21, wherein the host cell is selected from the group consisting of a plant cell and a bacterial cell.

23. A host cell according to claim 21, wherein the DNA molecule is transformed with an expression system.

24. A transgenic plant transformed with the DNA molecule of claim 10.

25. A transgenic plant according to claim 24, wherein the plant is selected from the group consisting of alfalfa, rice, wheat, barley, rye, cotton, sunflower, peanut, corn, potato, sweet potato, bean, pea, chicory, lettuce, endive,

cabbage, brussel sprout, beet, parsnip, turnip, cauliflower, broccoli, radish, spinach, onion, garlic, eggplant, pepper, celery, carrot, squash, pumpkin, zucchini, cucumber, apple, pear, melon, citrus, strawberry, grape, raspberry, pineapple, soybean, tobacco, tomato, sorghum, and sugarcane.

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26. A transgenic plant according to claim 24, wherein the plant is selected from the group consisting of *Arabidopsis thaliana*, *Saintpaulia*, petunia, pelargonium, poinsettia, chrysanthemum, carnation, and zinnia.

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27. A transgenic plant seed transformed with the DNA molecule of claim 10.

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28. A transgenic plant seed according to claim 27, wherein the plant seed is selected from the group consisting of alfalfa, rice, wheat, barley, rye, cotton, sunflower, peanut, corn, potato, sweet potato, bean, pea, chicory, lettuce, endive, cabbage, brussel sprout, beet, parsnip, turnip, cauliflower, broccoli, radish, spinach, onion, garlic, eggplant, pepper, celery, carrot, squash, pumpkin, zucchini, cucumber, apple, pear, melon, citrus, strawberry, grape, raspberry, pineapple, soybean, tobacco, tomato, sorghum, and sugarcane.

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29. A transgenic plant seed according to claim 27, wherein the plant seed is selected from the group consisting of *Arabidopsis thaliana*, *Saintpaulia*, petunia, pelargonium, poinsettia, chrysanthemum, carnation, and zinnia.

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30. A method of imparting disease resistance to plants comprising: applying a fragment of a hypersensitive response elicitor protein or polypeptide, which fragment does not elicit a hypersensitive response, in a non-infectious form to a plant or plant seed under conditions effective to impart disease resistance.

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31. A method according to claim 30, wherein plants are treated during said applying.

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32. A method according to claim 30 wherein plant seeds are treated during said applying, said method further comprising:

5 planting the seeds treated with the fragment of the
 hypersensitive response elicitor in natural or artificial soil and
 propagating plants from the seeds planted in the soil.

33. A method of enhancing plant growth comprising:
10 applying a fragment of a hypersensitive response elicitor
 protein or polypeptide, which fragment does not elicit a hypersensitive response, in a
 non-infectious form to a plant or plant seed under conditions effective to enhance
 plant growth.

34. A method according to claim 33, wherein plants are treated
15 during said applying.

35. A method according to claim 33, wherein plant seeds are
 treated during said applying, said method further comprising:
20 planting the seeds treated with the fragment of the
 hypersensitive response elicitor in natural or artificial soil and
 propagating plants from the seeds planted in the soil.

36. A method of insect control for plants comprising:
25 applying a fragment of a hypersensitive response elicitor protein or
 polypeptide, which fragment does not elicit a hypersensitive response, in a non-
 infectious form to a plant or plant seed under conditions effective to control insects.

37. A method according to claim 36, wherein plants are treated
 during said applying.

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38. A method according to claim 36, wherein plant seeds are
 treated during said applying, said method further comprising:

planting the seeds treated with the fragment of the
hypersensitive response elicitor in natural or artificial soil and
propagating plants from the seeds planted in the soil.

5 39. A method of imparting disease resistance to plants comprising:
 providing a transgenic plant or plant seed transformed with a
 DNA molecule which encodes a fragment of a hypersensitive response elicitor protein
 or polypeptide, which fragment does not elicit a hypersensitive response, and
 growing the transgenic plant or transgenic plants produced
10 from the transgenic plant seeds under conditions effective to impart disease resistance.

 40. A method according to claim 39, wherein a transgenic plant is
 provided.

15 41. A method according to claim 39, wherein a transgenic plant
 seed is provided.

 42. A method of enhancing plant growth comprising:
 providing a transgenic plant or a plant seed transformed with a
20 DNA molecule which encodes a fragment of a hypersensitive response elicitor protein
 or polypeptide, which fragment does not elicit a hypersensitive response, and
 growing the transgenic plant or transgenic plants produced
 from the transgenic plant seeds under conditions effective to enhance plant growth.

25 43. A method according to claim 42, wherein a transgenic plant is
 provided.

 44. A method according to claim 42, wherein a transgenic plant
 seed is provided.

30 45. A method of insect control for plants comprising:

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providing a transgenic plant or plant seed transformed with a DNA molecule which encodes a fragment of a hypersensitive response elicitor protein or polypeptide, which fragment does not elicit a hypersensitive response, and

growing the transgenic plant or transgenic plants produced
5 from the transgenic plant seeds under conditions effective to control insects.

46. A method according to claim 45, wherein a transgenic plant is provided.

10 47. A method according to claim 45, wherein a transgenic plant seed is provided.

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